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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,290	11/19/2001	Virginie Faineant	Q67252	8425

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
MATTIS, JASON E	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/988,290	FAINEANT ET AL.	
	Examiner	Art Unit	
	Jason E. Mattis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the amendment filed 11/7/05. New claims 20-22 have been added. Claims 1-22 are currently pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10, 13, 17, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudat et al. (U.S. Pat. 6310893) in view of Yuan et al. (U.S. Pat. 6310893).

With respect to claim 1, Gudat et al. discloses a method of sending data packets in an access network or satellite infrastructure network **(See column 15 line 48 to column 16 line 6 and column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to a method of sending data packets in a wireless wide area network, which uses low earth orbit satellites)**. Gudat et al. also discloses that the network supports sub-networks combining different terminal stations of the network **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to the network having sub-networks, such as a home network and a foreign network combining different mobile nodes, which are terminal stations, of the network)**.

Gudat et al. further discloses that each data packet is associated with an addressing header **(See column 6 lines 3-14 of Gudat et al. for reference to data packets having IP headers including source addresses and destination addresses)**. Gudat et al. also discloses that each terminal station of the network is associated with a satellite terminal or a ground station located in the coverage of a particular sport of a particular satellite **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to each mobile node being associated with a home agent, which is a satellite terminal or ground station in the embodiment using low earth orbit satellites, and for reference to the home agents being in a particular coverage area, which the mobile nodes may also be in or may move away from)**. Gudat et al. further discloses the addressing header of each packet further containing a label field containing an identifier characteristic of a sub-network to which the terminal station belongs **(See column 6 lines 15-63 and Figure 2 of Gudat et al. for reference to the addressing header of packets using a care-of address, which is a label field containing the address of a foreign agent of a sub-network to which the mobile node belongs)**. Gudat et al. does not disclose that the label field also contains the spot in which the satellite terminal or the ground station with which the terminal is associated is located.

With respect to claim 20, Gudat et al. does not disclose that the satellite has plural spot beams.

With respect to claim 21, Gudat et al. does not disclose that the label is selected from a set of plural labels each representing a different combination of subnetwork and at least one satellite spot.

With respect to claim 22, Gudat et al. does not disclose that the headers of at least some data packets destined for terminals in the same subnetwork but in different satellite spots will contain different labels.

With respect to claims 1 and 20-22, Yuan et al., in the field of communications, discloses a header of a packet in a satellite communication system that contains both an identifier characteristic of a sub-network to which a terminal station belongs and the spot in which the satellite terminal or the ground station with which the terminal is associated is located **(See column 4 line 50 to column 5 line 34 and Figure 3 of Yuan et al. for reference to a cell 300, which is a type of packet, used in a satellite network 110, with the cell header 310 including a downlink beam locater field 340, which is a label field that includes the identity of a satellite 150, which is the same as an identifier of a sub-network defined by all the nodes associated with the satellite 150, and also includes the identity of a particular downlink beam, or spot, on which the cell 300 is to be transmitted)**. Yuan et al. also discloses that the satellite has plural spot beans and that the labels are selected from multiple labels representing a different combination of subnetwork and at least one satellite spot with packets destined for terminals in the same subnetwork but in different satellite spots containing different labels **(See column 4 line 50 to column 5 line 34 and Figure 3 of Yuan et al. for reference to satellites multiple downlink beams, or spots, and for**

reference to each downlink beam locater field 340 being selected from labels represented different combinations of satellite identities and downlink beam identities with packet that are destined for terminals in the same satellite subnetwork but in different satellite beams having different labels). Using a header of a packet in a satellite communication system that contains both an identifier characteristic of a sub-network to which a terminal station belongs and the spot in which the satellite terminal or the ground station with which the terminal is associated is located has the advantage of allowing address resolution and routing of the packet to be performed with less processing since the network and spot routing information is carried explicitly in the header.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Yuan et al. to combine using a header of a packet in a satellite communication system that contains both an identifier characteristic of a sub-network to which a terminal station belongs and the spot in which the satellite terminal or the ground station with which the terminal is associated is located, as suggested by Yuan et al. with the system and method of Gudat et al., with the motivation being to allow address resolution and routing of the packet to be performed with less processing since the network and spot routing information is carried explicitly in the header.

With respect to claim 2, Gudat et al. discloses that data packets are sent with no connection between the sending satellite terminal or the sending ground station and the receiving satellite terminal or the receiving ground station **(See column 3 line 46 to**

column 4 line 25 of Gudat et al. for reference to sending packets using the Mobile IP protocol, meaning the data packets are sent hop-by-hop without setting up dedicated connects through the network between sources and destinations).

With respect to claim 3, Gudat et al. discloses that terminal stations consist of user terminals, routers, and data or service servers **(See column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to terminal stations including laptops 76, which are user terminals, routers 84, and mobile routers 78, which act as foreign agents to service address resolution requests)**.

With respect to claim 4, Gudat et al. discloses installing a centralized label determination server in each Internet service provider using the satellite network **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to home agents and foreign agents being installed in each sub-network, or service provider)**. Gudat et al. also discloses communicating the label corresponding to the label server to each satellite terminal or ground station of the network at the time of registration **(See column 5 lines 46-58 of Gudat et al. for reference to agent discover in which home agents and foreign agents advertise their location or sending their location in response to solicitation by a mobile node at the time of registration)**. Gudat et al. further discloses having the satellite terminal or ground station, to which a user requiring sending data to a target user connected to another satellite terminal or ground station, sending label request packet to the label server, and having the label server sending to the satellite terminal or sending ground station send a label response data packet containing the label of the sub-network to which the target

terminal station belongs **(See column 6 line 65 to column 7 line 60 and Figures 3-4 of Gudat et al. for reference to when a correspondent node does not have a binding cache entry for a destination mobile node, sending a packet, which is a label request packet, to the mobile node's home agent, and for reference to the home agent sending an authenticated binding update to the correspondent node informing the correspondent node of the mobile node's current care-of address, which is the label of the sub-network to which the mobile node belongs)**.

With respect to claim 5, Gudat et al. discloses that the label response data packet supplied by the label server contains a label that is established as a function of the hardware location of the terminal to which the target station is connected **(See column 6 line 65 to column 7 line 60 and Figures 3-4 of Gudat et al. for reference to the label response including the care-of address of the target mobile node, which is the address of the foreign agent to which the target mobile node is connected, meaning the care-of address is a function of the hardware location of the foreign network and the foreign node to which the mobile node is connected)**.

With respect to claim 6, Gudat et al. discloses that if the label server finds a label of a router by way of response to the request, the label server sends the router a label optimization data packet containing the address of the target terminal by way of a destination address **(See column 6 line 65 to column 7 line 60 and Figures 3-4 of Gudat et al. for reference to the home agent sending a binding update including the address of the target mobile node)**. Gudat et al. also discloses that any ground station belonging to the satellite network that is used by its router to forward the label

optimization data packet to another router sends back an indication that the router label to be retained for the target is the label of the router to which the ground station forwards the label optimization packet **(See column 6 line 65 to column 7 line 60 and Figures 3-4 of Gudat et al. for reference to when the original source receives and authenticates the binding update, it adds the binding update to the binding cache for future use)**.

With respect to claim 7, Gudat et al. discloses that the label optimization data packet has a limited lifetime outside the satellite network in order for it to be eliminated spontaneously as soon as transmitting it from one ground station to another is no longer considered to be able to optimize the routing **(See column 7 lines 33-49 of Gudat et al. for reference to the binding updates having a lifetime that is limited and for reference to the updated only being used until the lifetime expires)**.

With respect to claim 8, Gudat et al. discloses that the data packets are containers adapted to contain IP packets **(See column 6 lines 35-64 and Figure 2 of Gudat et al. for reference to data packets being tunneled by encapsulating an IP packet with an extra outer IP packet header)**.

With respect to claim 9, Gudat et al. discloses a satellite terminal having a table for each Internet service, with the table establishing a relationship between the target user terminal addresses and the labels associated with them, and the terminal listening to and receiving labels of sub-networks to which the user terminals associated with it belong **(See column 5 lines 30-34 of Gudat et al. for reference to correspondent nodes maintaining a binding cache, which is a table storing care-of addresses for**

corresponding mobile nodes and for reference to correspondent nodes receiving a binding update, which is a message containing updates to the binding cache).

With respect to claim 10, Gudat et al. discloses a satellite terminal storing the sending label of the ground station with which it is associated **(See column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to a terminal on front shovel 80 storing the address of a router 84, which is a ground station, so that packets can be sent to the to the ground station)**.

With respect to claim 13, Gudat et al. discloses an Internet service provider being associated with a label server adapted to supply an addressing label as a function of a target terminal station address of a data packet **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to the network having sub-network, such as the home network, which are Internet service providers, and for reference to the home network being associated with a home agent, which is a label server that supplies care-of addressing labels as a function of target terminal station addresses)**.

With respect to claim 17, Gudat et al. disclose a ground station including a means for recognizing a label optimization data packet and for sending the label server an indication that the label to be taken into account for the target is that to which the ground station forwards the label optimization data packet **(See column 6 line 65 to column 7 line 60 and Figures 3-4 of Gudat et al. for reference to the home agent sending a binding update including the address of the target mobile node and for reference to for reference to when the original source, or ground terminal,**

receives and authenticates the binding update, it adds the binding update to the binding cache for future use).

4. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudat et al. in view of Yuan et al. as applied to claims 1-10, 13, 17, and 20-22 above, and in further view of Hakulinen (WO 97/20413 as cited in the Applicant's IDS).

With respect to claims 11 and 12, the combination of Gudat et al. and Yuan et al. does not specifically disclose a terminal station is a user station, which, with the satellite terminal, constitutes one and the same equipment unit.

With respect to claims 11 and 12, Hakulinen, in the field of communications discloses a terminal station that is a user station and satellite terminal in the same equipment unit **(See page 9 line 25 to page 10 line 6 and Figure 5 of Hakulinen for reference to receiving device 9 which is a terminal station that is a user station and satellite terminal in the same equipment unit)**. Using a terminal station that is a user station and satellite terminal in the same equipment unit has the advantage of simplifying the network structure such that each user station does not have to be separately connected to a satellite terminal, since the user station also acts as a satellite terminal.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Hakulinen, to combine using a terminal station that is a user station and satellite terminal in the same equipment unit, as suggested by Hakulinen, with the system and method of Gudat et al. and Yuan et al.,

with the motivation being to simplify the network structure such that each user station does not have to be separately connected to a satellite terminal, since the user station also acts as a satellite terminal.

5. Claims 14-16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudat et al. in view Yuan et al. as applied to claims 1-10, 13, 17, and 20-22 above, and in further view of Cable et al. (U.S. Pat. 6570895).

With respect to claim 14, the combination of Gudat et al. and Yuan et al. does not specifically disclose a satellite having access to a table establishing a relationship between labels allocated to sub-networks and a means for sending a data packet associated with a given label.

With respect to claim 15, the combination of Gudat et al. and Yuan et al. does not specifically disclose that the table is contained in the satellite.

With respect to claim 16, the combination of Gudat et al. and Yuan et al. does not specifically disclose that the table is contained in a network control center.

With respect to claim 18, Gudat et al. discloses a satellite telecommunications system implementing the method of claim 1 **(See column 15 line 48 to column 16 line 6 and column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to a method of sending data packets in a wireless wide area network, which uses low earth orbit satellites)**. Gudat et al. also discloses at least one satellite terminal having a table for each Internet service provider with which are associated user terminals connected to satellite terminals with the table establishing a relationship between target

user terminal addresses and the label associated with them and the terminal listening to receiving labels of sub-network **(See column 5 lines 30-34 of Gudat et al. for reference to correspondence nodes, which are satellite terminals, having a binding cache, which is a table establishing relationship between target user terminals and care-of addresses associated with them and for reference to correspondent nodes receiving binding updates that update the binding cache relationships)**. Gudat et al. further discloses at least one Internet service provider associated with a label server adapted to supply an addressing label as a function of a target terminal station address of a data packet **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to the network containing sub-networks, such as the home network and the foreign network, which are Internet service providers, and for reference to the home network containing a home agent, which is a label server that supplies care-of addresses as a function of target terminal station addresses)**. The combination of Gudat et al. and Yuan et al. does not specifically disclose at least one satellite having access to a table establishing a relationship between labels allocated to sub-networks and a means for sending a data packet associated with a given label.

With respect to claim 19, Gudat et al. discloses a satellite telecommunications system implementing the method of claim 6 **(See column 15 line 48 to column 16 line 6 and column 17 lines 35-57 and Figure 12 of Gudat et al. for reference to a method of sending data packets in a wireless wide area network, which uses low earth orbit satellites)**. Gudat et al. also discloses at least one satellite terminal having

a table for each Internet service provider with which are associated user terminals connected to satellite terminals with the table establishing a relationship between target user terminal addresses and the label associated with them and the terminal listening to receiving labels of sub-network **(See column 5 lines 30-34 of Gudat et al. for reference to correspondence nodes, which are satellite terminals, having a binding cache, which is a table establishing relationship between target user terminals and care-of addresses associated with them and for reference to correspondent nodes receiving binding updates that update the binding cache relationships)**. Gudat et al. further discloses at least one Internet service provider associated with a label server adapted to supply an addressing label as a function of a target terminal station address of a data packet **(See column 4 line 28 to column 5 line 43 and Figure 1 of Gudat et al. for reference to the network containing sub-networks, such as the home network and the foreign network, which are Internet service providers, and for reference to the home network containing a home agent, which is a label server that supplies care-of addresses as a function of target terminal station addresses)**. Gudat et al. also discloses at least one ground station including means for recognizing a label optimization data packet coming from a label server and passing through the ground station to a target via a router connected to the ground station and for sending the label server an indicating that the label to be taken into account for the target is that to which the ground station forwards the label optimization data packet **(See column 6 line 65 to column 7 line 60 and Figures 3-4 of Gudat et al. for reference to the home agent sending a binding update**

including the address of the target mobile node and for reference to for reference to when the original source, or ground terminal, receives and authenticates the binding update, it adds the binding update to the binding cache for future use). The combination of Gudat et al. and Yuan et al. does not specifically disclose at least one satellite having access to a table establishing a relationship between labels allocated to sub-networks and a means for sending a data packet associated with a given label.

With respect to claim 14-16 and 18-19, Cable et al., in the field of communications, discloses a satellite that has access to a routing table that is located in the satellite and an access table located in a network control center **(See column 7 lines 16-30 and Figure 3 of Cable et al. for reference to a satellite 2 having a routing table located in the satellite and for reference to routing table being located also in a satellite remote control center 14 that communicates routing table updates to the routing table of the satellite)**. Using a satellite that has access to a routing table that is located in the satellite and an access table located in a network control center has the advantage of allowing the satellite to act as an independent IP router such that data can be routed from the satellite to the specific destination indicated by the routing table.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Cable et al., to combine using a satellite that has access to a routing table that is located in the satellite and an access table located in a network control center, as suggested by Cable et al., with the system and method

of Gudat et al. and Yuan et al., with the motivation being t o allow the satellite to act as an independent IP router such that data can be routed from the satellite to the specific destination indicated by the routing table.

Response to Arguments

6. Applicant's arguments filed 11/7/05 with respect to the rejection(s) of claim(s) 1-19 under 35 U.S.C. 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yuan et al. (U.S. Pat. 6310893).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jem

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600